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DATA FROM THE COMMERCIAL FISHERY FOR LAKE WHITEFISH, Coregonus clupeaformis (Mitchill), ON GREAT SLAVE LAKE, NORTHWEST TERRITORIES, 1981

by

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Western Region

Department of Fisheries and Oceans

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ABSTRACT

Roberge, M.M., G. Low, and C.J. Read. 1982. Data from the commercial fishery for lake whitefish, Coregonus clupeaformis (Mitchill), on Great Slave Lake, Northwest Territories, 1981. Can. Data Rep. Fish. Aquat. Sci. 335: iv + 21 p.

Data from the fish plant sampling on the Great Slave Lake commercial fishery, summer and partial winter, are presented. Production and catch per unit of effort by vessel type at weekly intervals by fishing area are shown. A total of 2902 lake whitefish were sampled for age, length and weight.

Key words: catch composition; catch/effort; catch statistics; commercial fishing; exploitation; fishery management; life history; mesh regulations; monitoring.

RESUME

Roberge, M.M., G. Low, and C.J. Read. 1982. Data from the commercial fishery for lake whitefish, Coregonus clupeaformis (Mitchill), on Great Slave Lake, Northwest Territories, 1981. Can. Data Rep. Fish. Aquat. Sci. 335: iv + 21 p.

L'étude présente les données découlant d'un échantillonnage à une usine de traitement du poisson dans le Great Slave Lake, à l'été et à l'hiver partial. Elles montrent la production et la prise par unité d'effort, à des intervalles hebdomadaires, par type de bateau et par zone de pêche. On a prélevé 2902 grands corégones pour en déterminer l'âge, la longueur et le poids.

Mots-clés: composition de la prise; prise/effort; statistiques des prises; pêche commerciale; exploitation; gestion de la pêche; cycle évolutif; réglementation du maillage; surveillance.

INTRODUCTION

In 1971, the Department of Fisheries began a long term stock assessment and monitoring program designed to collect information considered essential for the sound management of the Great Slave Lake commercial fishery, consistent with the recommendations of the Great Slave Working Party (1969). The objectives of this program are:

i) to maintain a record of the total commercial landings (production) by species, by weight and by administrative area;
ii) to monitor the catch per unit effort (CPE), cullage and change in relative abundance of all fish species landed through sampling of commercial net hauls;
iii) to assess the change in age, size, growth rate and mortality - especially in lake whitefish, and
iv) to assess the population structure of the various fish species.

In order to meet these objectives, a three component field study was implemented. This consisted of:

i) Fish plant sampling - monitoring the landings of all commercial species and sampling the catch for biological information (age, length, weight). with special emphasis on lake whitefish;
ii Fishery observations - monitoring the catch per unit of effort, cullage and relative abundance of all species landed, and
iii) Experimental netting - setting standard gangs of gillnets in the traditional commercial fishing areas of the lake.

Results of this work for the years 1972 to 1980 have been described by Bond (1974a, b; 1975a, b), Bond and Turnbull (1973), Moshenko et al. (1978; 1981) and Moshenko and Low (1978a, b; 1979; 1980).

During 1981, two components (fish plant sampling and experimental netting) of the program were carried out. This report summaries, in tabular form the data gathered from fish plant sampling. Data from the 1981 experimental netting combined with the 1980 data will be published separately.

STUDY AREA

Great Slave Lake lies in the southwest corner of the District of Mackenzie, Northwest Territories (Fig. 1). It is the fifth largest lake in North America, having a surface area of 27,195 km^2 and a drainage area of 985,300 km^2. Stretching 440 km from its extreme east end to the outlet of the Mackenzie River, the lake straddles two physiographic regions. The northeast shore of the north arm and the east arm lie within the Precambrian Shield and have irregular, precipitous margins. The western portion of the lake overlies the alluvial plain known as the Mackenzie Lowlands and has few islands and gently sloping shores. The rivers entering the lake from the Shield are cold, clear and rapidly flowing while those entering from the south are slow flowing brown water streams laden with silt during spring and early summer. While the western basin has a maximum depth of about 165 m and a mean depth of 42 m, a depth of 625 m has been recorded in the east arm. Physical and biological characteristics of the lake have been described previously in detail by Rawson (1950, 1951, 1953a, b).

DESCRIPTION OF THE FISHERY

Great Slave Lake has been fished commercially since 1945. During the 1950's annual production of whitefish and trout averaged 2.9 million kilograms as the large accumulated stock was exploited. Since the 1950's commercial production of both species has decreased annually and whitefish and trout have reacted differently to exploitation (Keleher 1972). The west end of the lake is now being managed for whitefish production with minimal regard to lake trout which have been unable to withstand commercial gill-netting. Other than the mesh change in 1977 from 5 ½ in (140 mm) to 5 1/4 in (133 mm), gillnets of 5 ½ in (140 mm) stretched mesh have been the sole means of exploitation with no restriction on number of nets since 1961. During its history almost the entire lake has been open to commercial fishing although certain areas have been closed to protect Indian subsistence and sport fishing (Fig. 1 and Northwest Territories Fishery Regulations 1979). The east arm of Great Slave Lake (Area VI) was closed to commercial fishing in 1974 and is being managed exclusively for Indian subsistence and sport fishing (Moshenko and Gillman 1978).

A minimum of 25 fish species occur in the lake (Keleher 1972) of which only five are of commercial importance. The major commercial species in decreasing order of importance are lake whitefish, Coregonus clupeaformis (Mitchill); lake trout, Salvelinus namaycush (Walbaum); inconnu, Stenodus leucichthys (Pallas); northern pike, Esox lucius (Linnaeus); and walleye (pickerel), Stizostedion vitreum vitreum (Mitchill). Cisco Coregonus spp., burbot Lota lota (Linnaeus) and longnose sucker, Catostomus catostomus (Forster) may constitute up to 40% or more of the total species catch; however, they are culled on the lake due to lack of market demand.

For the management of the commercial fishery the lake is divided into six administrative areas and a portion of the total annual quota of 1,681,900 kilograms round weight of whitefish and trout is allotted to each area (Table 1). The annual quota is based on the period commencing 1 November and terminating on the following 31 October and applies to the combined catch for both the winter and summer fisheries. More detailed histories of the commercial fishery on Great Slave Lake are discussed by Kennedy (1956), Keleher (1972) and Bond and Turnbull (1973). The description of the winter and summer fisheries is summarized by Moshenko et al. (1978).

MATERIALS AND METHODS

FISH PLANT SAMPLING

Monthly summaries of the landings by administrative area of the five commercial species were compiled from the Freshwater Fish Marketing Corporation (FFMC) sales slips by Fisheries and Oceans staff in Hay River. All data were presented in metric units in 1981 since the fishing industry converted to metric, effective June, 1981.

The following table lists the factors used to convert various species and forms to round weight:

Species	Form	Conversion Factor
Whitefish	dressed	× 1.17
Pickerel	dressed	× 1.22
	headless	× 1,39
Trout	dressed	× 1.21
	headless	× 1.53
Pike	dressed	× 1.22
	headless	× 1.53
Inconnu	dressed	× 1.16
	headless	× 1.35

Production values presented in this report (Tables 2 and 3) include whitefish culls at the plant but do not include an estimate of cull discarded on the lake due to deterioration following extended periods in the nets (usually the result of storms). Fishermen cull these fish as the nets are lifted. Fish which do not meet the market size and quality requirements are further culled by graders at the fish plant and the weight is recorded on the sales slip. Cullage on the lake was not substracted from the quota again this season. Cullage will be subtracted from the lake quota when management programs provide a good estimate of lake cullage.

Commercial landings of whitefish were sampled at each of the four fish plants: Simpson Island, Wool Bay, Moraine Bay and Hay River (Fig. 1). Commencing in June, 1981, the sample size was reduced from 300 to 200 whitefish per sample period per administrative area after being tested by the t-test. The reduced sample size was found not to be significantly different at the 5% level ($P > 0.05$). Sampling time schedule was also changed from the monthly summer season schedule (June-September) to a year-round schedule as follows:

Winter - January 1 to March 30
Spring - June 10 to July 10
Summer - July 21 to August 21
Fall - September 1 to September 30

Boxes of fish were selected at random from the catches of the various fishermen as they arrived at the plant. All whitefish in the box, up to a maximum of 70 fish per individual fisherman were sampled. Thus, the sample of 200 whitefish should have been taken from at least three different fishermen. An additional 15 fish were sampled to account for scale samples which were unsuitable for aging. The fish were measured for fork length (± 1 mm) and dressed weight (± 50 g). Scales were taken from the left side of the fish from the area just above the lateral line and below the dorsal fin.

CATCH PER UNIT OF EFFORT (CPE)

Number of vessel deliveries and whitefish landings (production in kilograms round weight) by weekly intervals for each administrative area (Table 6) were calculated as described by Moshenko et al. (1978; 1981) and Moshenko and Low (1979; 1980).

Total whitefish production, estimates for total numbers of nets used and CPE (kilograms round weight/91 m/24 h) by weekly intervals (Tables 7-13) were calculated as described by Moshenko et al. (1978; 1981) and Moshenko and Low (1979; 1980).

BIOLOGICAL DATA

The scale age was determined by counting the number of completed annuli. Thus, an age 10 fish was in its eleventh year.

Annual mortality rates (natural and fishing) were calculated using the method (all ages known) outlined by Robson and Chapman (1961). The total annual mortality is defined as the number of fish which die during a year, divided by the initial number (Ricker 1975). The right hand descending portion of a catch curve may be used to estimate annual mortality rates if the following assumptions can be met:

i) constant survival or mortality rates over the range of age classes, and with time,
ii) constant year class strength (even recruitment), and
iii) all fish beyond some age are equally vulnerable to the harvesting gear.

Ricker (1975) indicated that the modal age in the catch curve will commonly lie quite close to the first year in which recruitment can be considered effectively complete. Recruitment is defined as the addition of new fish to the vulnerable population by growth among small size categories. In our calculations, we first selected the modal age class and then chose the next older age class to be sure that all fish beyond this age are at the age of effectively complete recruitment and fully susceptible to the gear.

The majority of the data collected during the study were analyzed using the computer facilities at the University of Manitoba as well as a Hewlett Packard (model 9810 A) programmable calculator.

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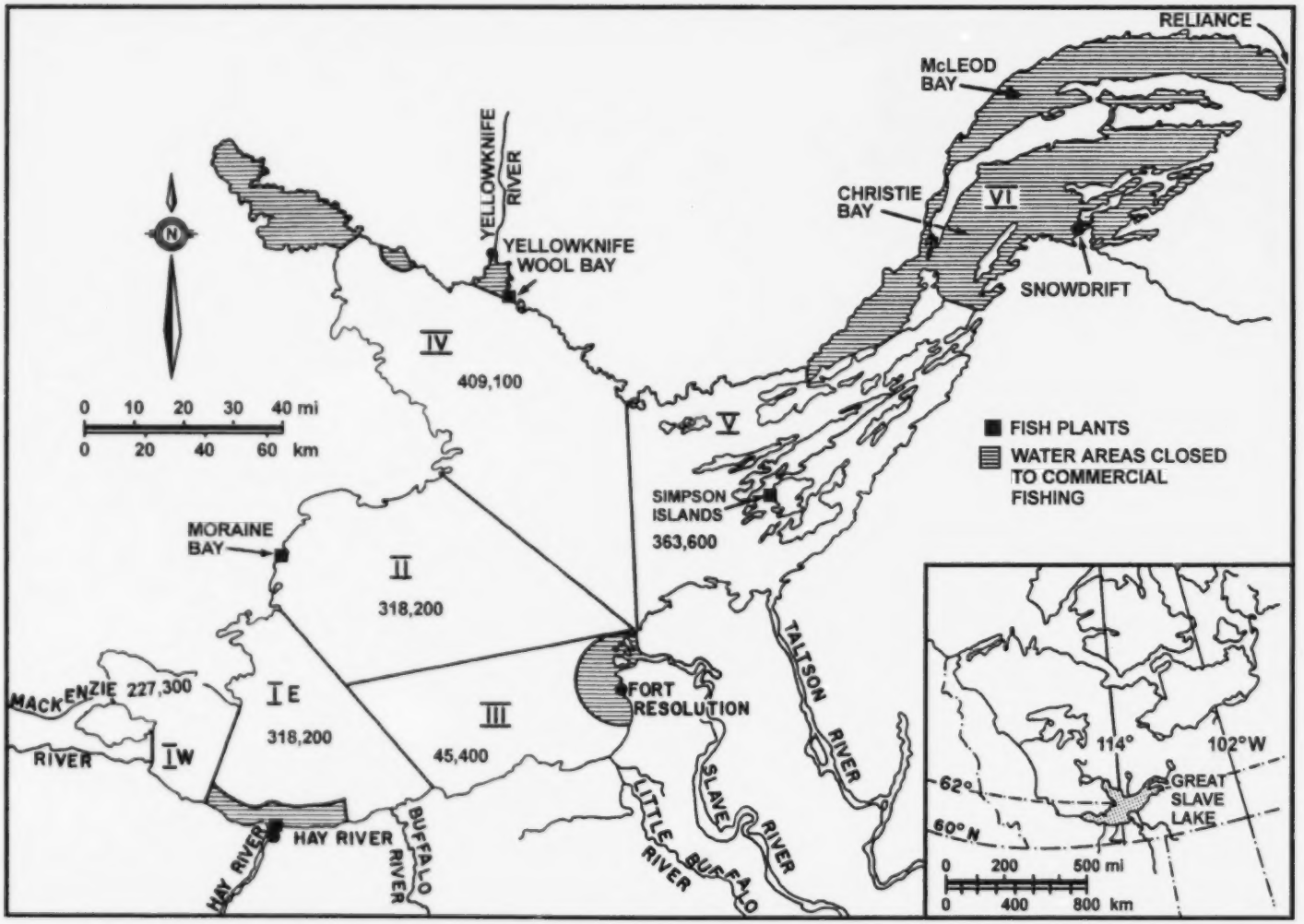

Fig. 1. Map of Great Slave Lake showing the administrative areas and quotas (kilograms round weight) in effect during 1981, areas closed to commercial fishing and the location of fish plants.

Table 1. Commercial quotas in effect on Great Slave Lake during the 1976 to 1981 seasons.

Administrative Area	Commercial Quota of Whitefish and Lake Trout Kilograms round weight (Pounds round weight)				
	1976[a]	1977, 1978[b]	1979[c]	1980[d]	1981[e]
IW	227,273 (500,000)	227,273 (500,000)	227,273 (500,000)	226,273 (500,000)	227,300
IE	318,181 (700,000)	318,181 (700,000)	318,181 (700,000)	318,181 (700,000)	318,200
II	681,818 (1,500,000)	318,181 (700,000)	318,181 (700,000)	318,181 (700,000)	318,200
III	-	-	45,455 (100,000)	45,455 (100,000)	45,400
IV	622,727 (1,370,000)	409,091 (900,000)	409,091 (900,000)	409,091 (900,000)	409,100
V	325,000 (715,000)	272,727 (600,000)	295,455 (650,000)	363,636 (800,000)	363,600
Total	2,175,000 (4,785,000)	1,545,455 (3,400,000)	1,613,636 (3,550,000)	1,681,818 (3,700,000)	1,681,900

[a] November 1, 1975 - October 31, 1976.

[b] November 1, 1976 - October 31, 1978.

[c] November 1, 1978 - October 31, 1979.

[d] November 1, 1979 - October 31, 1980.

[e] November 1, 1980 - October 31, 1981.

Table 2. Total production of commercial species (kilograms round weight) by administrative areas, 1981.

Species	Production from each administrative area						
	IW	IE	II	III	IV	V	Total
Whitefish	208,563	158,606	201,615	9,121	271,236	247,998	1,097,139
Trout	875	3,227	2,245	2	835	78,004	85,188
Pike	62,328	17,542	7,927	8,442	11,489	43,138	150,866
Inconnu	1,034	16,203	439	189	1,165	24,269	43,299
Walleye	481	1,070	57	546	213	1,752	4,119
Total	273,281	196,546	212,283	18,300	284,938	395,161	1,380,611

Table 3. Production of whitefish and trout (kilograms round weight) from each administrative area for winter and summer seasons, 1981.

Administrative Area	Winter		Summer		Total		
	Whitefish	Trout	Whitefish	Trout	Whitefish	Trout	Total
IW	153,299	249	55,264	626	208,563	875	209,438
IE	35,837	276	122,769	2,951	158,606	3,227	161,833
II	44,847	426	156,768	1,819	201,615	2,245	203,860
III	-	-	9,121	2	9,121	2	9,123
IV	75,533	294	195,703	541	271,236	835	272,071
V	87,931	1,875	160,067	76,129	247,998	78,004	326,002
Total	397,447	3,120	699,692	82,068	1,097,139	85,188	1,182,327

Table 4. Winter and summer prices (¢/kg) for the commercial fish species, basis loose fresh fish, F.0.B. Hay River Plant, from Great Slave Lake, N.W.T. for 1981.

Species and Form	Winter 1980-81[1]			Summer 1981[2]
	Nov. 1	Jan 4	Mar 1	June 26[3]
Whitefish - dressed				
export smokers	115	137	159	96
jumbo (1.8 kg)	137	148	159	111
large (1.4 - 1.8 kg)	115	137	148	96
medium (0.7 - 1.4 kg)	104	126	148	88
small (0.5 - 0.7 kg)	71	82	93	56
Lake Trout				
dressed - medium (1.8 - 3.6 kg)	121	121	121	107
- small (0.9 - 1.8 kg)	88	88	88	74
headless - dressed (3.6 kg)	132	132	132	118
Pickerel				
round - large	203	225	258	202
- medium	203	225	258	202
- small	159	181	203	153
headless dressed - large	236	258	280	299
- medium	236	258	280	299
- small	192	214	236	233
Northern Pike				
head-on dressed (0.9 - 1.8 kg)	57	57	57	45
(1.8 - 4.1 kg)	71	71	71	76
headless - dressed (0.7 kg)	57	57	57	45
(0.3 - 0.7 kg)	57	57	57	45
Inconnu				
headless dressed	82	82	82	91

[1] 25% of the price was deducted for fish delivered frozen.

[2] A freight charge of 6.6¢kg was deducted for fish delivered to Moraine Bay, Wool Bay and Simpson Islands.

[3] Initial 1981 summer prices offered by the Freshwater Fish Marketing Corporation (F.F.M.C.) were 21¢/kg lower than those offered on June 26, 1981 to cover freight costs from Hay River to the main F.F.M.C. plant in Transcona, Manitoba. In addition, 24¢/kg was to be deducted for fish delivered to the three fish stations on Great Slave Lake to cover the operational costs of the packer ship; M. V. Broadhead. The fishermen were unable to operate on these prices and most refused to fish. The government of the Northwest Territories agreed to subsidize freight costs on June 26 allowing the F.F.M.C. to offer the prices listed above.

Table 5. Information on vehicle and vessel operations, number of men and number of nets used in the Great Slave Lake commercial fishery, winter 1980-81 and summer 1981.

Winter Fishery[a] (November - May):

	No. lic. Approved	No. licences issued	No. of vehicles producing	Total no. of Men	No. of Men /Vehicle	No. of Nets /Vehicle
bombardier	Class A 32	28	27	67	2.5	30
skidoo	Class B 30	20	12	17	1.4	15
Total	62	48	39	84	-	-

Summer fishery[b] (June - October):

	No. lic. Approved	No. licences issued	No. of vessels producing	Total No. of Men	No. of Men /Vessel	No. of Nets /Vessel
skiffs	Class B 80	59	39	58	1.5	24
whitefish boats	Class A 28	24	18	68	3.8	71
Total	108	83	57	126	-	-

[a] Information obtained from Conservation and Protection records, Hay River.

[b] Last three columns based on 1979 fishery observation records (Moshenko and Low 1980).

Table 6. Number of vessel deliveries and whitefish landings (production in kilograms round weight) by weekly intervals for each administrative area, June to October, 1981.

Week	June				July				August				
Ending	7	14	21	28	5	12	19	26	2	9	16	23	30
AREA IE													
Class A	4	4	8	3	9	6	10	12	12	4	7	6	5
Class B	7	9	21	25	11	14	23	26	32	33	20	14	9
Production	198	275	1545	5825	4853	2230	5588	35035	11376	10145	8979	8780	4880
AREA IW													
Class A	-	-	2	23	10	-	-	-	-	-	-	-	-
Class B	-	-	3	22	5	-	-	-	-	-	-	-	-
Production	-	-	3978	39985	11301	-	-	-	-	-	-	-	-
AREA II													
Class A	-	-	-	-	-	17	23	27	21	28	21	27	25
Class B	-	-	-	-	-	-	-	-	-	-	-	-	-
Production	-	-	-	-	-	13088	4890	12170	9007	29180	21786	16894	19970
AREA III													
Class A	-	-	-	-	-	-	-	-	-	-	-	-	-
Class B	-	-	-	-	-	-	-	-	-	-	-	-	-
Production	-	-	-	-	-	-	-	-	-	-	-	-	-
AREA IV													
Class A	-	-	-	-	-	2	13	21	11	16	14	13	17
Class B	-	-	-	-	-	2	12	24	16	21	26	25	23
Production	-	-	-	-	-	3337	11373	15081	10327	12676	16737	14124	16160
AREA V													
Class A	-	-	-	-	-	-	1	16	17	25	27	22	20
Class B	-	-	-	-	-	-	2	26	29	36	43	35	43
Production	-	-	-	-	-	-	1980	16782	12600	14752	16240	13214	13941
ALL AREAS													
Class A	4	4	10	26	19	25	47	76	61	73	69	68	67
Class B	7	9	24	47	16	16	37	76	77	90	89	74	75
Production	198	275	5523	45810	16154	18655	23831	79068	43310	66753	63742	53012	54951

Table 6. Continued.

Week Ending	September				October				
	6	13	20	27	4	11	18	25	Total
AREA IE									
Class A	6	9	13	9	13	15	-	-	155
Class B	5	10	9	7	3	8	-	-	286
Production	2403	5455	6652	3822	2950	1778	-	-	122769
AREA IW									
Class A	-	-	-	-	-	-	-	-	35
Class B	-	-	-	-	-	-	-	-	30
Production	-	-	-	-	-	-	-	-	55264
AREA II									
Class A	14	13	13	12	-	-	-	-	241
Class B	-	-	-	-	-	-	-	-	-
Production	7284	5329	8771	8399	-	-	-	-	156768
AREA III									
Class A	-	-	-	-	1	-	-	-	1
Class B	-	-	-	-	6	14	14	6	40
Production	-	-	-	-	1956	2692	3416	1057	9121
AREA IV									
Class A	11	13	21	14	-	5	-	-	171
Class B	28	25	24	16	-	-	-	-	242
Production	19421	28541	26647	17615	-	3664	-	-	195703
AREA V									
Class A	19	30	12	5	-	-	-	-	194
Class B	43	53	41	3	-	-	-	-	354
Production	18889	29623	18334	3712	-	-	-	-	160067
ALL AREAS									
Class A	50	65	59	40	14	14	4	2	797
Class B	76	88	74	26	9	22	14	6	952
Production	47997	68948	60404	33548	4906	8134	3416	1057	699692

Table 7. Total whitefish production, estimates for total number of nets used and CPE by weekly intervals for all areas.

Week Ending	Production (kg round wt)	Number of nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
June 7	198	410	0.5
14	275	446	0.6
21	5523	1142	4.8
28	45810	2692	17.0
Total	51806	4690	11.0 (244)[c]
July 5	16154	1637	9.9
12	18655	2063	9.0
19	23831	4003	5.9
26	79068	6764	11.7
Total	137708	14467	9.5 (21.0)
Aug. 2	43310	5717	7.6
9	66753	6803	9.8
16	63742	6501	9.8
23	53012	6158	8.6
30	54951	6107	9.0
Total	281768	31286	9.0 (19.9)
Sept. 6	47997	4918	9.8
13	68948	6199	11.1
20	60404	5521	10.9
27	33548	3308	10.1
Total	210897	19946	10.6 (23.3)
Oct. 4	4906	1156	4.2
11	8134	1390	5.8
18	3416	536	6.4
25	1057	250	4.2
Total	17513	3332	5.3 (11.6)
Season Total	699692	73721	9.5 (20.9)

Table 8. Total whitefish production, estimates for total number of nets used and CPE by weekly intervals for Area IE.

Week Ending	Production (kg round wt)	Number of nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
June 7	198	410	0.5
14	215	446	0.6
21	1545	946	1.6
28	5825	663	8.8
Total	7843	2465	3.2 (7.0)[c]
July 5	4853	837	5.8
12	2230	678	3.3
19	5588	1124	5.0
26	35035	1320	26.5
Total	47706	3959	12.0 (26.5)
Aug. 2	11376	1428	8.0
9	10145	878	11.6
16	8979	857	10.5
23	8780	678	13.0
30	4880	517	9.4
Total	44160	4358	10.3 (22.7)
Sept. 6	2403	516	4.7
13	5455	819	6.7
20	6.652	1085	6.1
27	3822	765	5.0
Total	18332	3185	5.8 (12.8)
Oct. 4	2950	977	3
11	1778	1209	1.5
18			
25			
Total	4728	2186	2.2 (4.8)
Season Total	122,769	16153	7.6 (16.8)

[a] Refer to materials and methods for calculation.
[b] Round Weight.
[c] (lb/100yd/24h) in brackets.

Table 9. Total whitefish production, estimates for total number of nets used and CPE by weekly intervals for Area IW.

Week Ending	Production (kg round wt)	Number nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
June 7	-	-	-
14	-	-	-
21	3,978	196	20.3
28	39,985	2,029	19.7
Total	43,963	2,225	19.8 (43.7)[c]
July 5	11,301	800	14.1
Total	11,301	800	14.1 (31.1)
Seasonal Total	55,264	3,025	18.3 (40.3)

[a] Refer to materials and methods for calculation.
[b] Round weight.
[c] (lb/100yd/24h) in brackets.

Table 10. Total whitefish production, estimates for total number of nets used and CPE by weekly intervals for Area III.

Week Ending	Production (kg round wt)	Number nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
Oct. 4	1,956	179	10.9
11	2,692	252	10.7
18	3,416	252	13.6
25	1,057	108	9.8
Total	9,121	791	11.5 (25.4)
Seasonal Total	9,121	791	11.5 (25.4)

[a] Refer to materials and methods for calculations.
[b] Round Weight.
[c] (lb/100yd/24h) in brackets.

Table 11. Total whitefish production, estimates for total number of nets used and CPE by weekly intervals for Area II.

Week Ending	Production (kg round wt)	Number nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
July 12	13,088	1,207	10.8
19	4,890	1,633	3.0
26	12,170	1,917	6.4
Total	30,148	4,757	6.3 (14.0)[c]
Aug. 2	9,007	1,491	6.0
9	29,180	1,988	14.7
16	21,786	1,491	14.6
23	16,894	1,917	8.8
30	19,970	1,775	11.3
Total	96,837	8,662	11.2 (24.7)
Sept. 6	7,284	994	7.3
13	5,329	923	5.8
20	8,771	923	9.5
27	8,399	852	9.7
Total	29,783	3,692	8.1 (17.9)
Seasonal Total	156,768	17,111	9.2 (20.2)

[a] Refer to materials and methods for calculations.
[b] Round Weight.
[c] (lb/100yd/24h) in brackets.

Table 12. Total whitefish production, estimates for total number of nets used and CPE by weekly intervals for Area IV.

Week Ending	Production (kg round wt)	Number of nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
July 12	3,337	178	18.7
19	11,373	1,139	10.0
26	15,081	1,923	7.8
Total	29,791	3,240	9.2 (20.3)[c]
Aug. 2	10,327	1,069	9.7
9	12,676	1,514	8.4
16	16,737	1,462	11.5
23	14,124	1,373	10.3
30	16,160	1,621	10.0
Total	70,024	7,039	9.9 (21.9)
Sept. 6	19,421	1,285	15.1
13	28,541	1,373	20.8
20	26,647	1,923	13.9
27	17,615	1,282	13.7
Total	92,224	5,863	15.7 (34.7)
Oct. 4	-	-	-
11	3,664	355	10.3
18	-	-	-
25	-	-	-
Total	3,664	355	10.3 (22.7)
Season	195,703	16,497	11.7 (26.2)

[a] Refer to materials and methods for calculations.
[b] Round Weight.
[c] (lb/100yd/24h) in brackets.

Table 13. Total whitefish production, estimates for total number of nets used and CPE hy weekly intervals for Area V.

Week Ending	Production (kg round wt)	Number of nets used[a] (91 m each)	CPE (kg/91m/24h)[b]
July 19	1,980	107	18.5
26	16,782	2,314	7.2
Total	18,762	2,421	7.7 (17.0)[c]
Aug. 2	12,600	1,729	7.3
9	14,752	2,423	6.1
16	16,240	2,691	6.0
23	13,214	2,192	6.0
30	13,941	2,194	6.4
Total	70,747	11,229	6.3 (13.9)
Sept. 6	18,889	2,123	8.9
13	29,623	3,084	9.6
20	18,334	1,590	11.5
27	3,712	409	9.1
Total	70,558	7,206	9.8 (21.6)
Season	160,067	20,856	7.7 (16.9)

[a] Refer to materials and methods for calculations.
[b] Round Weight.
[c] (lb/100yd/24h) in brackets.

Table 14. Weight composition by market weight intervals for lake whitefish from commercial plant samples on Great Slave Lake, 1981.

MARKET WEIGHT INTERVAL (DRESSED)	AREA IE		AREA IW		AREA II		AREA IV		AREA V		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
NO MARKET (0-1 LB,0-454 G)	3	<1	-	-	-	-	6	1	-	-	9	<1
SMALL (1-1.5 LB,455-690 G)	12	2	15	3	26	4	36	5	10	2	99	3
MEDIUM (1.5-3 LB,681-1362 G)	578	92	463	90	594	90	596	90	408	94	2639	91
LARGE (3-4 LB,1363-1816 G)	35	5	33	6	42	6	17	3	16	3	143	5
JUMBO (>4 LB, >1816 G)	3 -	<1	2	<1	1	<1	5	<1	1	<1	12	<1
TOTAL	631		513		663		660		435		2902	

Table 15. Age composition of commercial whitefish for all areas combined from Great slave Lake commercial fishery. 1981.

AGE (YR)	NO.	%	FORK LENGTH(MM) MEAN	FORK LENGTH(MM) SD.	DRESSED WEIGHT (G) MEAN	DRESSED WEIGHT (G) SD.
5	2	-	356	63	550	212
6	46	2	398	37	864	242
7	126	5	403	31	878	202
8	211	8	410	29	927	196
9	358	13	411	25	928	164
10	677	25	417	27	977	189
11	696	25	422	26	996	187
12	361	13	429	24	1,038	193
13	165	6	442	29	1,112	248
14	70	3	446	27	1,166	282
15	26	1	467	44	1,313	336
16	9	0	457	42	1,228	372
17	6	0	466	37	1,325	383
TOTAL	2,753					
MEAN			421	29	991	211
MEAN AGE	10					

Table 16. Age composition of commercial whitefish for each seasonal period from areas IW, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
		MEAN FORK LEN.	MEAN DR. WT.		MEAN FORK LEN.	MEAN DR. WT.		MEAN FORK LEN.	MEAN DR. WT.		MEAN FORK LEN.	MEAN DR. WT.		FORK LENGTH(MM)		DRESSED WEIGHT (G)	
AGE (YR)	NO.	(MM)	(G)	NO.	(MM)	(G)	NO.	(MM)	(G)	NO.	(MM)	(G)	NO.	MEAN	SD.	MEAN	SD.
6	5	382	740	-	-	-	-	-	-	-	-	-	5	382	37	740	178
7	6	392	800	2	419	1,075	-	-	-	-	-	-	8	399	20	869	169
8	34	403	871	9	415	1,000	-	-	-	-	-	-	43	405	22	898	166
9	25	410	910	35	415	1,019	-	-	-	-	-	-	60	413	24	973	196
10	61	414	906	57	416	1,027	-	-	-	-	-	-	118	415	26	964	194
11	89	423	963	52	425	1,057	-	-	-	-	-	-	141	423	22	998	159
12	42	431	1,031	24	441	1,198	-	-	-	-	-	-	66	435	24	1,092	214
13	9	444	1,106	11	473	1,414	-	-	-	-	-	-	20	460	36	1,275	274
14	5	463	1,330	3	463	1,333	-	-	-	-	-	-	8	463	33	1,331	276
15	3	493	1,583	4	509	1,538	-	-	-	-	-	-	7	502	33	1,557	262
TOTAL	279			197			-			-			476				
MEAN		419	935		437	1,090	-	-	-		-	-		422	30	1,011	221
MEAN AGE	10			11			-			-			10				

Table 17. Age composition of commercial whitefish for each seasonal period from area IE, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
		MEAN FORK	MEAN DR.		MEAN FORK	MEAN DR.		MEAN FORK	MEAN DR.		MEAN FORK	MEAN DR.		FORK LENGTH(MM)		DRESSED WEIGHT(G)	
AGE (YR)	NO.	LEN. (MM)	WT. (G)	NO.	LEN. (MM)	WT. (G)	NO.	LEN. (MM)	WT. (G)	NO.	LEN. (MM)	WT. (G)	NO.	MEAN	SD.	MEAN	SD.
6	-	-	-	1	415	900	-	-	-	7	425	1,071	8	423	14	1,050	158
7	-	-	-	5	373	740	1	324	450	10	399	865	16	386	35	800	192
8	-	-	-	6	386	872	6	402	842	20	421	998	32	411	36	945	251
9	-	-	-	28	404	938	20	405	900	28	417	941	76	409	23	929	142
10	-	-	-	79	413	1,022	63	416	973	67	428	1,052	209	419	26	1,017	183
11	-	-	-	42	423	1,050	61	422	994	47	436	1,119	150	427	25	1,049	191
12	-	-	-	15	430	1,117	32	440	1,102	20	439	1,168	67	437	22	1,125	161
13	-	-	-	3	463	1,233	10	442	1,135	6	468	1,383	19	453	20	1,229	204
14	-	-	-	2	467	1,625	2	462	1,300	-	-		4	465	38	1,463	464
15	-	-	-	-	-	-	2	483	1,550	-	-		2	483	29	1,550	354
16	-	-	-	1	534	2,000	1	462	1,200	-	-		2	498	51	1,600	566
TOTAL	-			182			198			205			585				
MEAN		-	-		415	1,025		422	1,005		428	1,060		422	29	1,030	209
MEAN AGE	-			10.2			10.7			9.9			10.3				

Table 18. Age composition of commercial whitefish for each seasonal period from area II. 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
		MEAN FORK	MEAN DR.		MEAN FORK	MEAN DR.		MEAN FORK	MEAN DR.		MEAN FORK	MEAN DR.		FORK LENGTH (MM)		DRESSED WEIGHT (G)	
AGE (YR)	NO.	LEN. (MM)	WT. (G)	NO.	LEN. (MM)	WT. (G)	NO.	LEN. (MM)	WT. (G)	NO.	LEN. (MM)	WT. (G)	NO.	MEAN		MEAN	SD.
6	-	-	-	-	-	-	9	375	733	12	429	1,054	21	406	36	917	233
7	-	-	-	12	403	883	16	389	809	39	429	1,029	67	414	28	951	196
8	-	-	-	17	400	853	39	406	902	36	438	1,100	92	417	28	970	189
9	-	-	-	37	408	911	45	410	907	34	436	1,084	116	417	25	960	163
10	-	-	-	63	416	944	46	424	1,001	37	442	1,126	146	425	29	1,008	199
11	-	-	-	61	427	1,080	37	426	1,004	27	450	1,189	125	432	31	1,081	238
12	-	-	-	22	428	1,052	13	425	1,023	10	453	1,185	45	432	25	1,073	185
13	-	-	-	7	437	1,150	8	444	1,113	6	457	1,183	21	445	24	1,145	179
14	-	-	-	2	454	1,200	-	-	-	1	493	1,400	3	467	28	1,267	231
TOTAL	-			221			213			202			636				
MEAN		-	-		418	985		414	943		439	1,106		423	30	1,009	207
MEAN AGE	-			10			9			9			10				

Table 19. Age composition of commercial whitefish for each seasonal period from area IV. 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
		MEAN	MEAN		MEAN	MEAN		MEAN	MEAN		MEAN	MEAN		FORK LENGTH (MM)		DRESSED WEIGHT (G)	
AGE (YR)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	MEAN	SD.	MEAN	SD.
5	-	-	-	-	-	-	1	311	400	-	-	-	1	311	-	400	-
6	-	-	-	6	376	708	2	347	575	-	-	-	8	369	40	675	238
7	-	-	-	9	405	844	9	373	667	3	359	583	21	384	31	731	166
8	-	-	-	12	402	876	16	402	844	7	378	707	35	397	27	827	163
9	-	-	-	32	405	861	39	399	854	13	391	808	84	400	25	849	141
10	-	-	-	79	408	923	52	415	935	27	401	854	158	409	27	915	172
11	-	-	-	47	412	952	54	418	972	86	404	892	187	410	23	930	155
12	-	-	-	20	437	1,103	20	424	1,023	47	415	955	87	422	26	1,005	197
13	-	-	-	10	454	1,255	6	439	1,133	17	442	1,156	33	445	37	1,182	317
14	-	-	-	3	471	1,433	4	452	1,338	5	436	1,100	12	450	21	1,263	241
15	-	-	-	-	-	-	1	484	1,600	3	479	1,433	4	480	46	1,475	343
16	-	-	-	-	-	-	1	450	1,150	1	418	1,000	2	434	23	1,075	106
TOTAL	-			218			205			209			632				
MEAN		-	-		413	947		412	931		409	920		411	30	933	210
MEAN AGE	-			10			10			11			11				

Table 20. Age composition of commercial whitefish for each seasonal period from area V8 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
		MEAN	MEAN		MEAN	MEAN		MEAN	MEAN		MEAN	MEAN		FORK LENGTH(MM)		DRESSED WEIGHT(G)	
AGE (YR)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	FORK LEN. (MM)	DR. WT. (G)	NO.	MEAN	SD.	MEAN	SD.
5	-	-	-	-	-	-		1400	700	-	-	-	1	400	-	700	-
6	-	-	-	-	-	-	3	381	817	1	390	550	4	383	16.6	750	178.0
7	-	-	-	-	-	-	13	397	862	1	387	600	14	396	19.6	843	162.7
8	-	-	-	-	-	-	8	416	956	1	387	800	9	413	35.6	939	179.9
9	-	-	-	-	-	-	16	427	969	6	413	850	22	423	19.9	936	125.5
10	-	-	-	-	-	-	21	429	1033	25	418	868	46	423	17.6	943	154.8
11	-	-	-	-	-	-	49	429	962	44	413	888	93	421	20.6	927	123
12	-	-	-	-	-	-	42	431	985	54	422	931	96	426	20.2	954	156.9
13	-	-	-	-	-	-	33	439	1038	39	425	955	72	431	21.3	993	170.8
14	-	-	-	-	-	-	16	448	1150	27	434	1030	43	439	24.3	1074	242.8
15	-	-	-	-	-	-	8	450	1150	5	429	1010	13	442	36.6	1096	239.3
16	-	-	-	-	-	-	-	-	-	5	449	1140	5	449	38.9	1140	320.9
17	-	-	-	-	-	-	2	476	1525	4	461	1225	6	466	37.3	1325	383.1
TOTAL	-			-			212			212			424				
MEAN		-	-		-			430	1003		422	938		426	24.4	970	185.7
MEAN AGE	-			-			11.2			12.1			11.7				

Table 21. Length composition of commercial whitefish for all areas combined from Greet Slave Lake commercial fishery, 1981.

LENGTH INTERVAL			FORK LENGTH (MM)		DRESSED WEIGHT (G)	
(MM)	NO.	%	MEAN	SD.	MEAN	SD.
290-299	2	-	296	3	375	35
300-309	1	-	309	-	450	-
310-319	1	-	311	-	400	-
320-329	7	0	325	2	480	81
330-339	3	0	336	4	617	161
340-349	10	0	346	2	630	136
350-359	17	1	356	3	632	77
360-369	54	2	365	3	663	73
370-379	93	3	375	3	727	84
380-389	166	6	384	3	780	75
390-399	277	10	394	3	838	81
400-409	382	13	404	3	879	78
410-419	396	14	414	3	940	82
420-429	458	16	424	3	992	85
430-439	360	12	434	3	1,059	96
440-449	244	8	444	3	1,129	113
450-459	168	6	454	3	1,193	109
460-469	102	4	464	3	1,284	123
470-479	68	2	474	3	1,353	149
480-489	34	1	483	3	1,409	180
490-499	23	1	493	2	1,528	134
500-509	16	1	505	2	1,691	225
510-519	7	0	513	4	1,736	75
520-529	7	0	524	3	1,864	175
530-539	3	0	534	3	1,817	318
540-549	2	-	541	1	1,825	106
550-559	1	-	550	-	2,100	-
TOTAL	2,902					
MEAN	421			30	992	212

Table 22. Length composition of commercial whitefish for each seasonal period from area IW, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
LENGTH INTERVAL (MM)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	FORK LENGTH(MM) MEAN	SD.	DRESSED WEIGHT(G) MEAN	SD.
330-339	1	332	500	1	339	800	-	-	-	-	-	-	2	336	5	650	212
350-359	1	354	600	1	358	800	-	-	-	-	-	-	2	356	3	700	141
360-369	4	367	663	-	-	-	-	-	-	-	-	-	4	367	3	663	25
370-379	6	375	633	8	377	750	-	-	-	-	-	-	14	376	3	700	88
380-389	15	385	743	8	384	838	-	-	-	-	-	-	23	384	3	776	78
390-399	31	394	794	22	395	907	-	-	-	-	-	-	53	394	3	841	99
400-409	52	404	843	21	404	926	-	-	-	-	-	-	73	404	3	867	79
410-419	45	414	911	28	414	998	-	-	-	-	-	-	73	414	3	945	85
420-429	43	424	960	36	424	1,057	-	-	-	-	-	-	79	424	3	1,004	91
430-439	36	433	1,028	28	434	1,114	-	-	-	-	-	-	64	434	3	1,066	89
440-449	32	445	1,141	19	444	1,208	-	-	-	-	-	-	51	444	3	1,166	131
450-459	12	455	1,208	8	454	1,250	-	-	-	-	-	-	20	455	3	1,225	77
460-469	10	464	1,260	11	465	1,350	-	-	-	-	-	-	21	464	3	1,307	117
470-479	3	474	1,467	4	473	1,400	-	-	-	-	-	-	7	473	2	1,429	196
480-489	2	485	1,375	5	481	1,420	-	-	-	-	-	-	7	482	3	1,407	73
490-499	3	493	1,417	1	495	1,450	-	-	-	-	-	-	4	493	2	1,425	166
500-509	3	503	1,400	3	508	1,683	-	-	-	-	-	-	6	506	3	1,542	227
510-519	-	-	-	4	514	1,750	-	-	-	-	-	-	4	514	4	1,750	100
520-529	1	523	2,000	3	524	1,733	-	-	-	-	-	-	4	524	3	1,800	163
530-539		-	-	1	537	1,450	-	-	-	-	-	-	1	537	-	1,450	-
540-549	-	-	-	1	541	1,750	-	-	-	-	-	-	1	541	-	1,750	-
TOTAL	300			213			-			-			513				
MEAN		420	959		428	1,095		-	-		-	-		423	30	1,015	226

Table 23. Length composition of commercial whitefish for each seasonal period from area IE, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
LENGTH INTERVAL (MM)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	FORK LENGTH(MM) MEAN	FORK LENGTH(MM) SD.	DRESSED WEIGHT(G) MEAN	DRESSED WEIGHT(G) SD.
290-299	-	-	-	1	294	400	-	-	-	-	-	-	1	294	-	400	-
300-309	-	-	-	1	309	450	-	-	-	-	-	-	1	309	-	450	-
320-329	-	-	-	1	328	458	1	324	450	-	-	-	2	326	3	454	6
340-349	-	-	-	1	343	750	-	-	-	-	-	-	1	343	-	750	-
350-359	-	-	-	1	359	700	-	-	-	1	357	600	2	358	1	650	71
360-369	-	-	-	6	364	708	2	365	775	4	363	600	12	364	3	683	107
370-379	-	-	-	7	375	779	6	377	767	3	374	617	16	376	2	744	96
380-389	-	-	-	13	384	842	17	386	815	8	384	813	38	385	3	824	87
390-399	-	-	-	28	394	873	16	394	863	12	394	813	56	394	3	857	79
400-409	-	-	-	33	404	953	28	404	886	19	405	913	80	404	3	920	83
410-419	-	-	-	34	415	997	22	416	961	30	414	960	86	415	3	975	81
420-429	-	-	-	26	425	1,083	37	424	1,004	36	425	1,021	99	424	3	1,031	82
430-439	-	-	-	18	434	1,139	37	435	1,061	29	434	1,090	84	434	3	1,088	96
440-449	-	-	-	14	443	1,225	14	445	1,089	26	444	1,140	54	444	3	1,149	109
450-459	-	-	-	9	455	1,289	13	454	1,165	21	454	1,238	43	454	3	1,227	118
460-469	-	-	-	4	465	1,388	7	463	1,286	10	464	1,340	21	464	3	1,331	112
470-479	-	-	-	3	471	1,317	5	475	1,320	10	474	1,340	18	474	2	1,331	113
480-489	-	-	-	3	481	1,433	1	482	1,500	2	483	1,450	6	482	2	1,450	100
490-499	-	-	-	-	-	-	3	492	1,467	3	492	1,583	6	492	1	1,525	178
500-509	-	-	-	1	503	2,050	1	503	1,800	-	-	-	2	503	0	1,925	177
510-519	-	-	-	1	510	1,700	-	-	-	-	-	-	1	510	-	1,700	-
520-529	-	-	-	-	-	-	-	-	-	1	525	2,100	1	525	-	2,100	-
530-539	-	-	-	1	534	2,000	-	-	-	-	-	-	1	534	-	2,000	-
TOTAL	-			206			210			215			631				
MEAN		-	-		414	1,020		422	1,001		428	1,060		422	29	1,027	208

Table 24. Length composition of commercial whitefish for each seasonal period from area II, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
LENGTH INTERVAL (MM)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	FORK LENGTH(MM) MEAN	FORK LENGTH(MM) SD.	DRESSED WEIGHT(G) MEAN	DRESSED WEIGHT(G) SD.
320-329	-	-	-	1	325	650	-	-	-	-	-	-	1	325	-	650	-
330-339	-	-	-	1	337	550	-	-	-	-	-	-	1	337	-	550	-
340-349	-	-	-	2	347	600	-	-	-	-	-	-	2	347	2	600	71
350-359	-	-	-	2	353	625	4	356	600	-	-	-	6	355	3	608	38
360-369	-	-	-	4	363	625	8	365	669	1	368	650	13	365	4	654	75
370-379	-	-	-	9	375	728	10	373	720	-	-	-	19	374	3	724	82
380-389	-	-	-	12	382	767	8	383	806	3	385	750	23	383	3	778	62
390-399	-	-	-	25	393	850	25	396	864	4	394	838	54	394	3	856	75
400-409	-	-	-	35	404	896	37	404	873	12	403	850	84	404	3	879	75
410-419	-	-	-	30	414	962	34	415	934	15	415	900	79	414	3	938	76
420-429	-	-	-	40	424	998	40	425	988	30	425	997	110	424	3	994	71
430-439	-	-	-	24	435	1,100	17	433	1,056	47	434	1,064	88	434	3	1,072	82
440-449	-	-	-	16	443	1,131	16	442	1,050	32	444	1,134	64	443	3	1,113	94
450-459	-	-	-	10	454	1,170	6	453	1,225	26	454	1,175	42	454	3	1,181	99
460-469	-	-	-	4	465	1,225	5	464	1,260	20	464	1,305	29	464	3	1,286	104
470-479	-	-	-	6	474	1,208	2	474	1,325	17	475	1,400	25	474	3	1,348	169
480-489	-	-	-	4	485	1,338	2	484	1,400	3	484	1,483	9	484	3	1,400	224
490-499	-	-	-	4	493	1,625	1	495	1,700	2	493	1,450	7	493	1	1,586	107
500-509	-	-	-	2	508	1,775	-	-	-	2	505	1,675	4	506	2	1,725	119
510-519	-	-	-	1	511	1,750	1	510	1,700	-	-	-	2	511	1	1,725	35
520-529	-	-	-	1	525	1,750	-	-	-	-	-	-	1	525	-	1,750	-
TOTAL	-			233			216			214			663				
MEAN		-	-		419	989		414	944		440	1,109		424	30	1,013	209

Table 25. Length composition of commercial whitefish for each seasonal period from area IV, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
LENGTH INTERVAL (MM)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	FORK LENGTH(MM) MEAN	FORK LENGTH(MM) SD.	DRESSED WEIGHT(G) MEAN	DRESSED WEIGHT(G) SD.
290-299	-	-	-	-	-	-	1	298	350	-	-	-	1	298	-	350	-
310-319	-	-	-	-	-	-	1	311	400	-	-	-	1	311	-	400	-
320-329	-	-	-	-	-	-	4	324	450	-	-	-	4	324	1	450	41
340-349	-	-	-	3	345	600	4	346	638	-	-	-	7	346	2	621	155
350-359	-	-	-	1	355	600	2	359	650	2	354	600	5	356	4	620	84
360369	-	-	-	8	363	656	8	367	681	6	365	633	22	365	3	659	59
370-379	-	-	-	14	376	714	10	374	715	15	375	730	39	375	3	721	57
380-389	-	-	-	31	384	768	9	384	767	26	384	779	66	384	3	772	56
390-399	-	-	-	31	394	810	30	395	838	31	395	826	92	394	3	824	64
400-409	-	-	-	18	404	864	25	403	876	47	404	894	90	404	3	883	56
410-419	-	-	-	31	414	950	32	414	931	29	414	941	92	414	3	941	70
420-429	-	-	-	27	424	994	32	424	983	29	423	1,002	88	424	3	993	73
430-439	-	-	-	18	434	1,086	24	434	1,008	11	434	1,055	53	434	3	1,044	107
440-449	-	-	-	16	444	1,138	8	445	1,156	11	444	1,164	35	444	2	1,150	85
450-459	-	-	-	12	454	1,204	14	454	1,211	4	454	1,163	30	454	3	1,202	102
460-469	-	-	-	7	464	1,229	5	463	1,280	4	465	1,200	16	464	3	1,238	137
470-479	-	-	-	2	477	1,400	1	475	1,500	-	-	-	3	476	1	1,433	76
480-489	-	-	-	3	482	1,600	2	482	1,400	-	-	-	5	482	3	1,520	202
490-499		-	-	3	494	1,567	-	-	-	1	491	1,500	4	494	4	1,550	58
500-509	-	-	-	3	504	1,850	-	-	-	1	502	1,500	4	504	2	1,763	229
530-539	-	-	-	-	-	-	-	-	-	1	532	2,000	1	532	-	2,000	-
540-549	-	-	-	-	-	-	-	-	-	1	540	1,900	1	540	-	1,900	-
550-559	-	-	-	-	-	-	1	550	2,100	-	-	-	1	550	-	2,100	-
TOTAL	-			228			213			219			660				
MEAN		-	-		413	952		411	927		408	917		411	30	932	212

Table 26. Length composition of commercial whitefish for each seasonal period from area V, 1981.

	WINTER			SPRING			SUMMER			FALL			TOTAL				
LENGTH INTERVAL (MM)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	MEAN FORK LEN. (MM)	MEAN DR. WT. (G)	NO.	FORK LENGTH(MM) MEAN	SD.	DRESSED WEIGHT(G) MEAN	SD.
350-359	-	-	-	-	-	-	2	357	650	-	-	-	2	357	2	650	141
360-369		-	-	-	-	-	1	362	650	2	365	650	3	364	4	650	50
370-379	-	-	-	-	-	-	3	378	900	2	373	675	5	376	4	810	164
380-389	-	-	-	-	-	-	4	384	763	12	385	708	16	385	2	722	84
390-399	-	-	-	-	-	-	9	395	811	13	394	788	22	394	3	798	96
400-409	-	-	-	-	-	-	19	404	839	36	405	824	55	404	3	829	71
410-419	-	-	-	-	-	-	33	415	888	33	414	891	66	414	3	889	81
420-429	-	-	-	-	-	-	37	425	942	45	424	922	82	424	3	931	78
430-439	-	-	-	-	-	-	39	435	1,031	32	434	994	71	435	3	1,014	96
440-449	-	-	-	-	-	-	26	444	1,065	14	443	1,061	40	444	3	1,064	115
450-459	-	-	-	-	-	-	18	454	1,158	15	453	1,117	33	454	3	1,139	115
460-469	-	-	-	-	-	-	9	463	1,211	6	462	1,258	15	463	2	1,230	142
470-479	-	-	-	-	-	-	8	475	1,381	7	473	1,286	15	474	3	1,337	137
480-489	-	-	-	-	-	-	4	482	1,188	3	485	1,467	7	483	3	1,307	215
490-499	-	-	-	-	-	-	2	495	1,500	-	-	-	2	495	5	1,500	71
520-529	-	-	-	-	-	-	1	520	2,000	-	-	-	1	520	-	2,000	-
TOTAL	-			-			215			220			435				
MEAN		-	-		-	-		430	1,003		423	938		426	25	970	185

Table 27. Annual mortality rates for commercial whitefish for each seasonal period from each area in 1981.

Area	Age-Classes Used	Survival (S)	SE of S	Var of S	Annual Mortality Rate(A), where A= 1-S
IW					
Winter	12-15	0.3256	0.0501	0.0025	0.6744
Spring	11-15	0.4329	0.0385	0.0015	0.5671
Total Season	12-15	0.3631	0.0382	0.0015	0.6369
IE					
Spring	11-16	0.3404	0.0485	0.0024	0.6596
Summer	11-16	0.3989	0.0365	0.0013	0.6011
Fall	11-16	0.3077	0.0449	0.0020	0.6923
Total Season	11-16	0.3571	0.0246	0.0006	0.6429
II					
Spring	11-14	0.3158	0.0401	0.0016	0.6842
Summer	11-14	0.3372	0.0505	0.0026	0.6628
Fall	11-14	0.3676	0.0578	0.0033	0.6324
Total Season	11-14	0.3322	0.0276	0.0008	0.6678
IV					
Spring	11-14	0.3828	0.0427	0.0018	0.6172
Summer	12-16	0.4038	0.0670	0.0045	0.5962
Fall	12-16	0.3571	0.0450	0.0020	0.6429
Total Season	12-16	0.3598	0.0327	0.0011	0.6402
V					
Summer	12-17	0.4975	0.0353	0.0012	0.5025
Fall	13-17	0.4626	0.0409	0.0017	0.5374
Total Season	13-17	0.4390	0.0315	0.0010	0.561
Total Lake	12-17	0.4138	0.0149	0.0002	0.5862